





It's a pleasure to send you a copy of  
"Crisis—Transportation."

This booklet is designed to call  
attention to the serious nationwide  
transportation problem.

You and other interested citizens  
are encouraged to examine the  
need for co-ordinated transportation  
systems in your community. If  
problem solutions are necessary we  
hope you will help initiate or  
support them.

**CATERPILLAR TRACTOR CO.**



**This is about People and Transportation.**





Highway  
Transportation





Mass  
Transportation



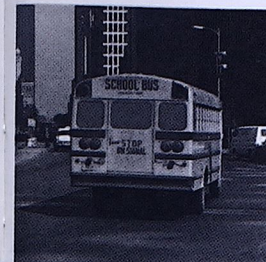
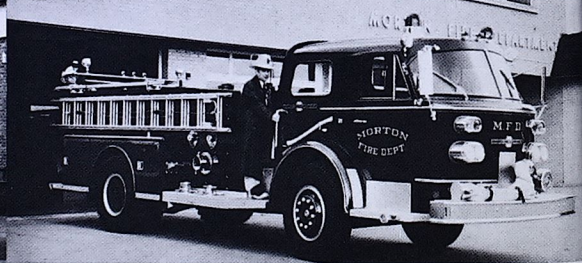


**Air  
Transportation.**





and how they affect your everyday life.



Transportation is a unique thing in our lives. It is so much an intimate part of our daily coming and going that, like breathing, it almost goes unnoticed.



**Yet transportation is unbelievably important.**

When it stops so does everything else. It's that vital to the welfare of the nation...the community...and you.



Transportation is vital to our livelihood, getting the things we have to sell to the people who want to buy...



- 98.5% of all U. S. hogs raised are transported somewhere to be dressed out.
- 53% of the U. S. corn crop is transported to final use destination.
- 95% of the U. S. wheat crop is transported to final use destination.
- 33% of the U. S. oat crop is carried to the place where it will be used.
- 73% of the U. S. barley crop is transported to final use destination.
- 82% of the U. S. grain sorghum is transported to final use destination.
- 81% of the U. S. hay crop is transported somewhere.
- 72% of the U. S. rye crop is transported somewhere.



or bringing the things  
we buy to us...



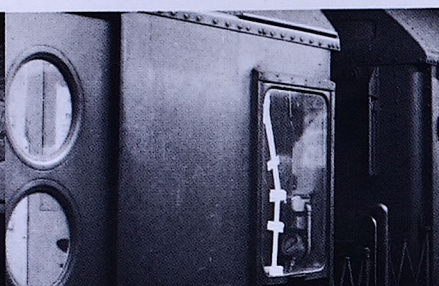
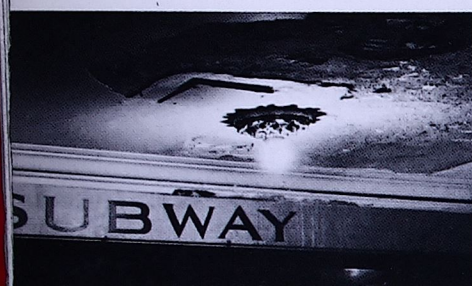
- Nearly 100% of the U. S. cotton goods are shipped to market.
- Nearly 100% of the oranges are shipped somewhere to be consumed.
- Nearly 100% of the U. S. consumed woolen goods are carried to final use destination.
- Nearly 100% of the U. S. tobacco products are transported to the stores.
- 99.7% of all U. S. cattle raised are transported to the meat market.
- Nearly 99% of the potato crop is shipped to market.
- 95.7% of all dairy products are transported to the consumer.
- 98% of all eggs are transported off the farm.
- 125,000 motor vehicles transport 55 billion quarts of milk to market, 1969.



- 18 billion passenger miles traveled mass transit systems, 1950.
- 8.25 billion passenger miles, projected, mass transit systems, 1975.
- Five U. S. cities have rail transit systems.
- 8.9 mph average rush hour Chicago Rapid Transit speed.
- Average commuter rides 35 minutes each way.
- Riding the elevated costs about 4¢ per mile.
- Driving a car costs about 11¢ per mile.
- 41% of the people going to downtown Chicago drive cars.
- Car owners spent 11% of disposable income on autos, 1960.
- Transit riders spent 1/2 % of their spendable income on car fare.
- Five European cities have special streets for bus traffic only.
- 12.5 mph average bus speed Chattanooga, Tenn.
- 29% U. S. city workers go to work by mass transit.



## A joke that no one laughs at.



- 37,662 electric railway cars in service, 1940.
- 10,645 electric railway cars in service, 1967.
- 11,032 subway and elevated cars in service, 1940.
- 9,257 subway and elevated cars in service, 1967.
- 35,000 busses in service, 1940. 50,180 busses in service, 1967.
- 13 billion passengers carried 1940. 8 billion passengers carried, 1967.
- Mass transit usage 1924 one-half 1965. Urban population 1965 two times 1924.
- 19,600 miles of electric railway track 1940. 2,049 miles in 1967.
- 901,400 miles of bus line 1945.
- 600 miles of urban bus line 1967.
- 449,000 people enter and leave New York City on a typical week day.
- 1917 94% cash fares under 5¢; 1961 100% over 15¢.
- 193 transit companies abandoned since 1954.
- 400 million people ride transit systems in Buenos Aires; 110 million in Chicago; 302 million in Tokyo and 77 million in Philadelphia.
- 73% of the U. S. population is jammed into 1% of the land area.



or taking us to work and bringing us home again.



- 33% of all farm workers are transported to work.
- Nearly 100% of all automobiles used are shipped to consumer.
- 99.9% of all dentists commute to work.
- Nearly 100% of all drugs and medicine must be transported somewhere.
- 100% of all diamonds must be carried to market.
- 98% of all businessmen ride to work.
- 80% of all workers ride to work.
- In 1776 99% of everybody had to work within walking distance of home.



## Those are the kinds of solutions we need.

Building them will take planning, ingenuity, and money. And where will that money come from?

High cost public benefit programs have traditionally been financed one of two ways; user taxes and allocations from general tax funds.

The Interstate System is a good example of user tax financing. A special Highway Trust Fund set up in 1956 is paying for Interstate construction. Taxes on road use items—cars, tires, oil, gas—supply that fund. It works well because only road users pay for road construction ... and only in proportion to the amount they use them.

Dulles Airport is another twist to user tax financing. Building money was appropriated by congress. Airlines and concessionaires pay rent for building space. Part of that rent plus landing fees are paying back construction costs.

But not everything can be financed by use taxes. Rapid Transit Companies and Bus Companies are not doing well now because not enough people ride them. They complain fares are too high. A use tax would only increase fares compounding the problem by cutting ridership even more.

Yet our cities and towns need cheap fast Mass Transit Systems to get people back and forth to work, for old people, poor people, for convenience.

Mass Transit Systems are as much a public service as street lights, police and fire protection, public schools. And like these other important services, they should have everyone's support. Everybody benefits.

Use taxes have proven successful for highway construction. A similar proposal for airports is before Congress. Where use taxes are inappropriate, we should not hesitate to draw from general funds. Transportation systems are that important.

The solutions are available.

Money can be made available.

All that is missing is...

dangerous and heartbreaking.



Alan Harkrader—Peoria Journal Star



There are too few really well engineered roadways to handle all the cars we own today.

We must build highways, bridges, tunnels, bypasses and expressways. But above all, we must integrate them intelligently with other transport systems: air lines, mass transportation media, rapid transit systems.

# Rapid transit systems...

That name calls up a mental picture of fast, efficient operation.

In most cases that picture is so far from reality it's almost a joke.



or taking us to work and bringing us home again.

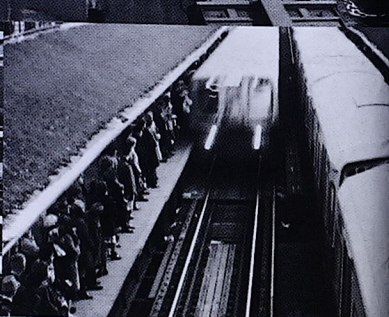


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Some form of transportation is involved in our whole life; the food we eat, our work, the clothes we wear, our rest, relaxation, lipstick, aftershave lotion.

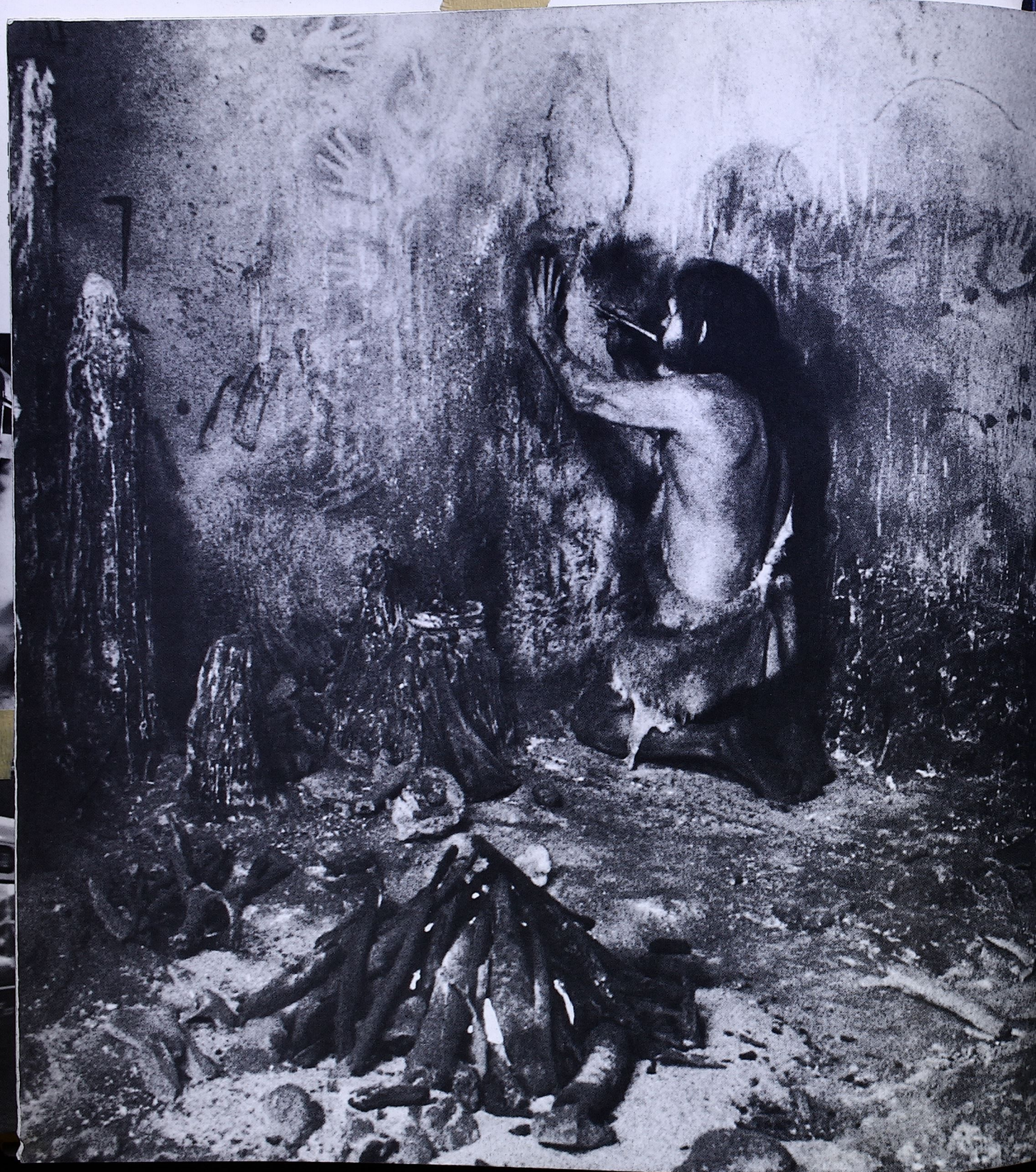
From the biggest thing to the smallest, transportation is a vital part of everything we do...



# Vital

THINK ABOUT IT





**Without a COMPLEX and ADEQUATE  
transportation system  
our worlds would perish.**

Without an up-to-date and well  
integrated transportation system our  
worlds will perish...or at the  
very least our lives will become  
unbelievably more difficult.





And the prospects for the future of transportation are not encouraging. If you drive a car, ride the subway or bus, if you have ever been inside an airport Christmas week, you probably have an inkling as to why the future is not encouraging.

We in the construction industry have more than an inkling. We have the facts.

We gather them in the normal course of forecasting factory production levels and needed plant capacity for future years.

We look at highway starts, airport construction, urban renewal, population growth, automobile registration, miles driven, tonnage carried and a hundred other things.

And, while looking for the key to future sales for the machines we make, we've come across some alarming facts about this country's transportation needs.



Our transportation system is the best in the world. Still, except for the completed part of the Interstate System, it is **INADEQUATE** to meet **TODAY'S** needs.

(Much less tomorrow's.)



City and secondary roads are inadequate and crowded...



- In 1930 there were 3 million miles of rural roads in the U.S. In 1970 3.2 million miles.
- 10% of total U. S. freight traffic was carried by motor vehicles in 1940; 25% is projected for 1975.
- Intercity bus revenue up 700% 1969 over 1940.
- 355,000 migrant farm workers depend on automobiles to get them from harvest to harvest.
- 174,000 police patrol cars in use 1969.
- 4,150 drive-in theaters in the U. S.; 26,500 drive-in restaurants.
- Average car is driven 9,582 miles per year.
- Passenger car sales 1930, 2,787,000; 1970, 9 million.
- Passenger car registrations 1930, 23 million; 1970, 90 million. 1980, 130 million.
- 103 million licensed drivers in the U. S.
- 60% of all women 15 years old and older are licensed to drive. 91% of all men.
- 1967, 4 million cars in Africa; 5 million in South America; 14 million in Asia, 65 million in Europe. Total 103 million. U. S. registration, 97 million cars.
- 79% of the U. S. families own one car.
- 82% of commuting workers commute by automobile.
- 90% of domestic vacation travel is by automobile.
- 26% of the U. S. families own two or more cars.



- 45 mph average highway speed 1945; 1970 will be 61 mph.
- 41% of all accident fatalities involve traveling too fast for conditions.
- 92% of automobiles sold in the U.S. are capable of speeds over 90 mph.
- Average rush hour turnpike speed 9.3 mph.
- 40% of all accident injuries occur between noon and 6 p.m.
- 34% of all accident fatalities occur between 6 p.m. and midnight.
- 59,000 people killed in traffic accidents 1969; 55,000 1968.
- 1,073,912 U.S. combat soldiers killed in action since 1775.
- 1,142,031 traffic fatalities in the U.S. since 1908.
- Death rate of Interstate system 3.0 per 100 million vehicle miles.
- Death rate all other roads 7.5 per 100 million vehicle miles.
- 14,600,000 motor vehicle accidents, 1968.
- Road conditions, people killed—76% dry.
- Weather conditions, people killed—84% clear.
- 22% of all traffic fatalities occur on Saturday.
- \$5,814,000,000 paid out in insurance losses 1967.
- 4,400,000 people injured in traffic accidents in 1968.



**Air transportation is moving in the same direction as surface systems; even now facilities are crowded to the limits of safety.**









Already frustrating,  
inconvenient, heartbreaking.



- 1774% increase in revenue miles flown 1940 to 1968.
- 938 airports in Texas; 667 in Alaska; 699 in California.
- Three airports in District of Columbia—61 square miles.
- 573,506 Commercial aircraft operations handled at Chicago O'Hare, 1967.
- 403,981 Commercial aircraft operations handled at John F. Kennedy, 1967.

- 384,656 Commercial aircraft operations handled at Los Angeles International, 1967.
- 59,000 instrument landings at Chicago O'Hare, 1967.
- 1.3 million instrument landings at U. S. airports under FAA control, 1967.
- 5.4 FAA registered aircraft for every 10,000 people U. S. 1967.
- 780 Total flight schools U. S. 1967.

- 71 total aircraft mechanic schools U. S. 1967.
- 1.4 billion business miles logged U. S. 1967.
- 128,169 U. S. helicopter passengers U. S. 1957.
- 1,500,000 U. S. helicopter passengers U. S. 1969 estimate.
- 3% of all scheduled airport departures are cancelled U. S. average 1967.

Sometimes barely adequate for today  
much less tomorrow.



- 412% increase in air revenues 1955-1967.
- 2331 U. S. airports in operation 1940.
- 10,470 U. S. airports in operation, 1968.
- 200,000 estimate total civil aircraft in operation, 1970.
- 3,740 million miles flown, 1968.
- 1,000,000 passengers per day estimated by 1980.

- 3.0 fatalities per 100 million miles flown on scheduled air carriers, 1940.
- 0.03 fatalities per 100 million miles flown on scheduled air carriers, 1968.
- 400 mph average speed 1969 estimate.
- 162,181,000 domestic air passengers, 1968.
- 145,774,000 international air passengers, 1968.

- 213,000 ton miles air freight, 1950.
- 2,506,000 ton miles air freight, 1968.
- Average cost to fly a mile 5½¢ domestic, 5¢ international.
- 263,000 miles of air routes in operation 1967.
- 40 charter flights, 1940.
- 2,867 charter flights, 1968.



Ironically, the surface systems serving the great air terminals are so under-built, time gained in the air is lost on the ground getting to and from the airport.



Comparative Travel Time.

		Total Time		Total Cost	
Downtown to Downtown	Miles	Driving	Flying*	Driving**	Flying***
Toledo — Detroit	59	1 hr 15 min	2 hr 50 min	\$ 6.49	\$31.75
Milwaukee — Chicago	86	1 hr 30 min	2 hr 25 min	9.46	25.15
Sacramento — San Francisco	90	1 hr 30 min	2 hr 20 min	9.90	20.86
Cincinnati — Indianapolis	105	1 hr 45 min	2 hr 46 min	11.55	26.95
Cleveland — Pittsburgh	131	2 hr 15 min	3 hr 5 min	14.41	29.95
New Orleans — Mobile	147	2 hr 45 min	2 hr 20 min	16.17	30.45
Boston — New York	213	4 hr no min	3 hr 5 min	23.43	31.95
Toronto — Detroit	233	4 hr 15 min	3 hr 35 min	25.63	36.55
New York — Washington	240	4 hr 15 min	3 hr 35 min	26.40	43.20

\*Includes cab to/from downtown, waiting and checking time before flight, baggage delay following flight.

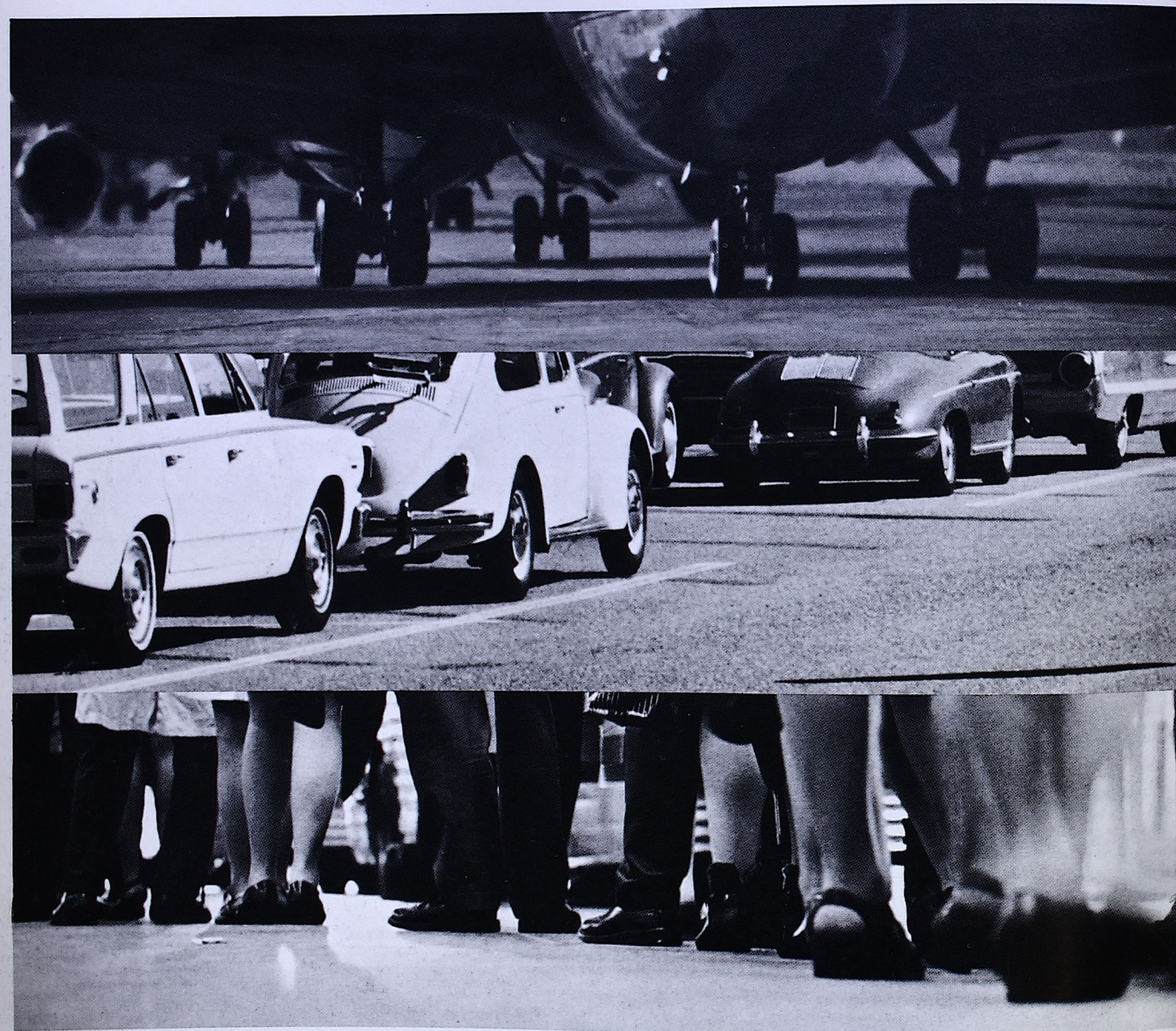
\*\*@ 11¢/mile.

\*\*\*Includes cab fares and tips.

Does not include stack up time or delays. Add 30 minutes to all flights in bad weather, 2 hours during traffic control slowdown, 8 hours if flight is cancelled.



If you look at air, mass transit and highways all together it's even more discouraging. There is no total system. Each one is separate and unrelated. It's a patchwork; disorganized, inefficient.



Something must be done

# Something must be done

to bring order to the situation

# Something must be done

before things become impossible

The following pages outline programs in existence somewhere now.

They are the kind of problem solutions we must begin to plan and build across the country—wherever needed.



## Program 1: Interstate

**America's Interstate Highway System: The teenager that changed the travel habits of a nation.**

Born by presidential decree in 1954, funded and begun in 1956, the Interstate Highway System has opened up the land-locked cities of our nation.

In 1940 driving time from Chicago to Indianapolis was over six hours.

Motels were little known, disreputable institutions.

Speed traps were a major road hazard.

But, by the time it was only three-fourths completed, the Interstate had changed all that.

Driving time to Indianapolis has dropped nearer three hours. Roadside services are a billion dollar industry. Traffic movement is controlled in some places by computers or by knowledgeable police officers skilled in public relations.

People, goods, services, flow quickly, safely from city to city on well-engineered ribbons of concrete.

100% completion will make Interstate travel from coast to coast a reality.



## Program 2: Dulles International

**A showcase air terminal for the nation's capital.**

The Dulles International Airport gleams beside a 187 foot control tower 26 miles from the nation's capital. Buslike mobile passenger lounges, now being adopted by other airports, eliminate passenger walking and exposure to weather, relieve crowding caused by planes taxiing in to load and unload.

Highway and transit systems will eventually make Dulles as convenient

to Washington travelers as National Airport four miles from the capital.

This integration of highway, rail and air represents a landmark step in a solution of our nation's traffic problems. It will act as a model and reference point for other systems to meet the problems of other communities.





### Program 3: BART

#### Bay Area Rapid Transit moves from wishful thinking to reality.

Late in the spring of 1964 construction officially began on the 75-mile Bay Area Rapid Transit system called BART.

After six years of organization, planning, funding, educating the public, buying rights-of-way, the massive project was on the way to meeting a 1971 deadline for revenue operation.

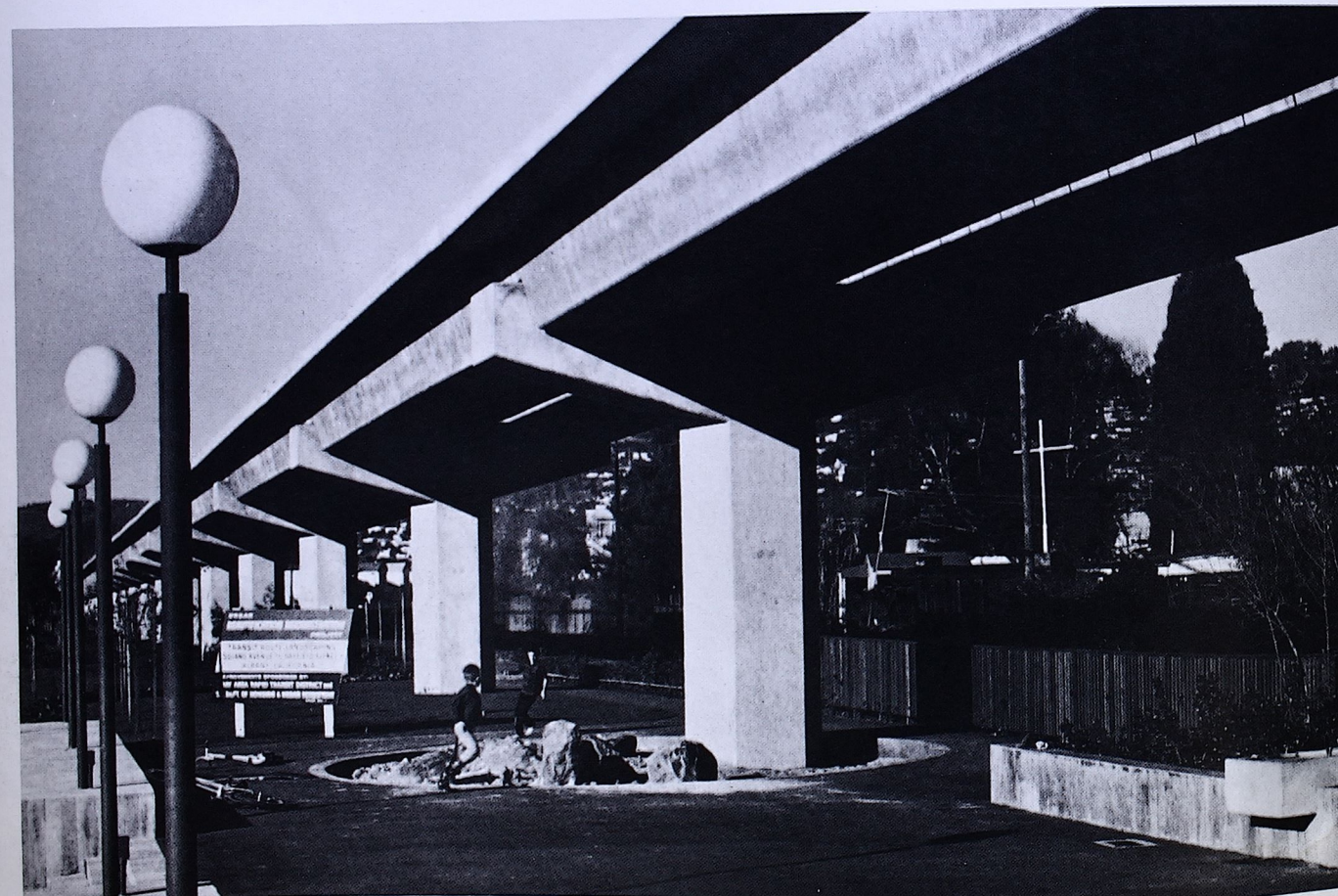
BART, the first new U. S. rapid transit system since 1909, is a better system, technologically and aesthetically, than the proposal approved in voter referendum in November, 1962.

250 computer directed, electric transit vehicles travel 75 miles of aerial and subway lines including a 3½ mile section underneath San Francisco Bay. The farthest community on the line is 37 minutes from downtown San Francisco at peak rush hour.

Most of BART's construction funding came from a \$792-million voter-approved general obligation bond issue and from State-authorized toll bridge revenues. A U. S. Department of Transportation grant made up an additional \$260-million.

Fourteen different architectural firms designed individual stations to make each fit the look and feeling of the community served. The aerial structure won several design awards. A federal beautification grant initiated development of a linear park to run along the aerial miles in the system.

Experts believe BART will revolutionize rapid transit thinking across the country.



### Program 4: Metroliner

#### Private industry sets the pace with high speed trains in the New York/Washington corridor.

The High Speed Ground Transportation Act of 1965 was passed with a great sense of urgency. The purpose of that act was to stimulate research and development of modes of transportation to handle high volumes of movement in densely populated areas.

Penn Central Transportation Company's Metroliner was a direct result of that act. Twelve high speed trains travel the 225 mile corridor daily between Washington and New York at speeds to 120 MPH. The six-car metroliner trains can accommodate 340 passengers per trip. Passengers have access to club car and snack bar coaches to help make the three-hour trip pleasant and comfortable.

Park and ride stations located near both ends of the line are set up to lure motorists to the rails, away from crowded metropolitan highways. Computerized reservation and ticket

services add to the convenience of this speed-oriented system. Current occupancy is a high 76% per run.

\$11 million in Federal funds have been spent on this project and an additional \$53 million came from Penn Central. Still in trial stages the project will recoup Federal Government investment if it proves profitable.





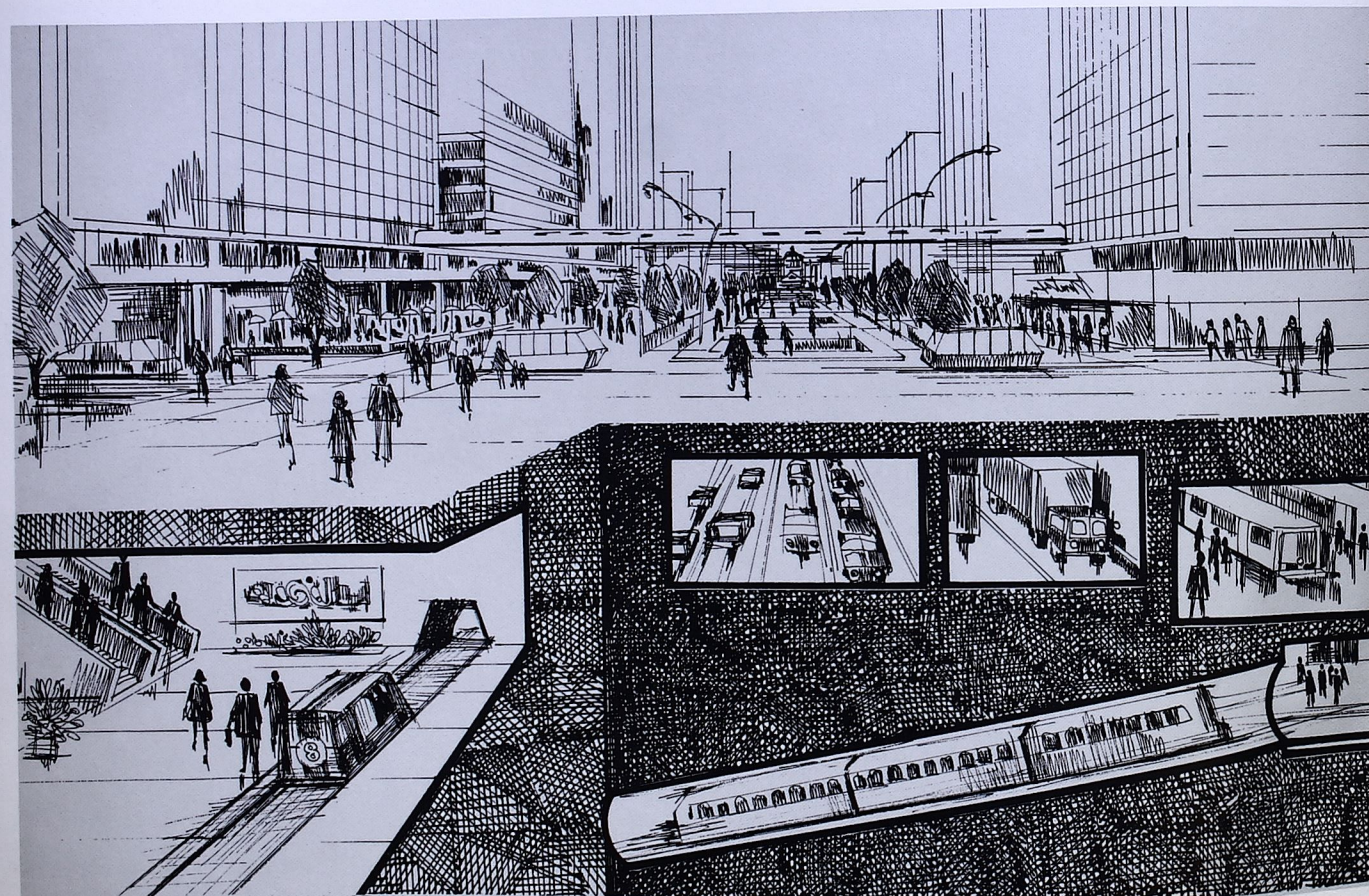
## Program 5: \*Tomorrow

### Today's dreams, the foundation of tomorrow's planning.

Underground arteries quicken the city's heartbeat in a downtown area a generation from now as envisioned by urban planners of the U. S. Department of Transportation. Free of the automobile, streets become "people places," disturbed only by minibusses. Overhead, travelers use an elevated and covered moving sidewalk, and an express tube for "people capsules" three stories above walking plazas.

The elevator links the surface with the noisy realm below, delivering pedestrians to a station where more capsules parade endlessly by. Passengers consult an electronic map for their destination code, then as many as four enter a capsule, punch their code numbers on a keyboard, insert credit cards, and zip home.

Beneath the subterranean network of autos, trucks, trains, and subways, a pneumatic train uses the pull of a vacuum to race between stations at speeds to 140 miles an hour. To leave the station, the train coasts downhill past airtight tunnel doors. It slows for the next stop by running uphill again. Comfortable and economical, the pneumatic train intrigues New York City officials as a possible solution to that city's critical problems.



## What can you do?

Here are a few suggestions to start with.

**Keep up with local problems and vote on all transportation bond issues.**

**Tell your legislators you intend to vote on transportation bond issues.**

**Let your legislators know you support long range transportation projects integrating air, roads, and mass transit.**

**Tell them if you favor user tax financing and continuation of the Highway Trust Fund.**

**If there is a community betterment group in your area working to develop a transit district, to get a bridge built, or a highway bypass, join them.**

**If there isn't a committee working on transportation problems in your area, get with some friends and organize one. (It's really easy.)**

**Contact the editor of your local paper. Suggest he write a series on transportation needs in your town.**

**Talk to the manager of a local radio station. Suggest that "Transportation Upgrade" might be a good community project for their station.**

**Phone your city planner for suggestions on active ways to support the programs he feels are needed.**

**Arrange for the city planner to speak on transportation problems to your church group, service or social club.**

**Talk up local legislation aimed at upgrading transportation systems in your town.**

**Pick out one or more of the above and do it.**




Together "We can make the world a better place to grow up in..."



"Crisis—Transportation" photography by Caterpillar staff photographers: C. C. Chapman, R. W. Johnson, J. G. Karl, C. M. Rickard, A. S. T. Rodsater, R. D. Stover





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